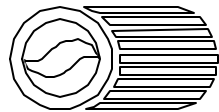


Workshop Regarding Regulatory Fuels Activities

April 5, 2001

California Environmental Protection Agency



Air Resources Board

Agenda

- ♦ Introductions
- ♦ Development of amendments to CARB Diesel Regulations
- ♦ Evaluation of Diesel Fuel Lubrication Oils, Lubricity, and Additives
- ♦ Review of MTBE and other ether De Minimus Levels in CaRFG3 Regulations
- ♦ Ongoing Work on Permeation from the Effects of Ethanol in Gasoline
- ♦ Ongoing Work on Commingling from the Effects of Ethanol in Gasoline
- ♦ Discussion of Legal/Enforcement Issues
- ♦ Open Discussion
- ♦ Closing Remarks

Proposed Amendments for California Diesel Fuel

- ◆ Lower CARB diesel sulfur limit to 15 ppm
- ◆ Applies to
 - On-road and off-road vehicle uses
 - Stationary sources (Air Toxic Control Measure)
- ◆ Necessary to implement diesel PM risk reduction plan

Proposed Amendments for California Diesel Fuel (Continued)

- ♦ No changes to aromatic hydrocarbon specifications

Proposed Amendments for California Diesel Fuel (Continued)

- ♦ Implementation concurrent with EPA rule - 2006
 - No phase-in
 - At this time, no provisions for small refiners

Proposed Amendments for California Diesel Fuel (Continued)

- ♦ Replace test method for determining sulfur content
 - Current test method ASTM D2622-94 (x-ray fluorescence) lacks adequate precision at 15 ppm
 - ASTM D5453-93 (ultraviolet fluorescence)
 - has a detection limit of 1 ppm

Proposed Amendments for California Diesel Fuel (Continued)

- ◆ Update diesel alternative formulation certification procedures
 - Revise sulfur specification in reference fuel (15 ppm)
 - Delete sulfate credit for candidate fuel
 - Provisions to ensure candidate fuel are comparable to produced fuels

Diesel Engine Lubrication Oils

- ♦ Two Groups Pursuing Research:
 - Advanced Petroleum Based Fuels - Diesel Emission Control (APBF-DEC) Lubricants Work Group
 - Industry/government work group
 - Diesel Aftertreatment Sensitivity to Lubricant (DASL)
 - initiated by Southwest Research Institute

Status of APBF-DEC Lubricants Work Group

- ◆ Involved in the last round of proposal evaluation for initial 12 month program
- ◆ Initial program to characterize effect on engine out emissions of :
 - Lubricant base stock
 - Lubricant additives
- ◆ Expect to make an award mid-April

New Research Consortium: Diesel Aftertreatment Sensitivity to Lubricant (DASL)

- ◆ Formed by Southwest Research Institute to compliment APBF-DEC Lubricants program
- ◆ Objective: probe impact of sulfur and other lubricant/additive components (including zinc, calcium, barium, magnesium, boron, and anti-wear agents) on diesel emission control systems
- ◆ Status: currently seeking funding

Diesel Fuel Lubricity

- ♦ Refinery industry well versed in ensuring adequate lubricity for desulfurized fuel
 - voluntarily maintaining 1994 Governor's Diesel Fuel Task Force minimum lubricity level
- ♦ ASTM Diesel Fuel Lubricity Task Force completing a major round robin program
 - Seeking to improve precision and response of lubricity measurement for additized fuel
- ♦ Continuing dialogue with industry to determine need for a lubricity standard

Diesel Additives

- ♦ Continue dialogue with industry to determine potential to provide deposit clean-up and keep clean benefits

CaRFG3 Issues

Gasoline Certification Fuel

- ◆ Plan regulatory update to the CaRFG2 certification fuel specifications
- ◆ Planning additional workshops in the near future
- ◆ Will work closely with auto, oil, and ethanol industries and the ARB Mobile Source Control Division
- ◆ Scheduled for consideration by the ARB Board in November 2001

MTBE Deminimus Levels

- ◆ Review current CaRFG3 MTBE deminimus limits
- ◆ Change current MTBE deminimus limits to oxygen content equivalent

Ongoing Permeation Emission Evaluation

- ◆ Contract awarded to investigate potential permeation emissions losses
 - Performed literature search for permeation rates with ethanol and non-ethanol gasolines
 - Confirms ethanol increases permeation emission losses
 - Gathering data on permeable fuel system materials in vehicle fleet to estimate statewide permeation emissions
 - Will design test program to evaluate permeation rates to increase available data
- ◆ Draft final report to be available near future

Ongoing Work on Commingling

- ◆ Board prohibited use of MTBE beginning December 31, 2002
- ◆ Federal oxygen requirement still in place
 - Ethanol only allowable oxygenate
 - 70% of California fuel
- ◆ Board directed the staff to further evaluate real-world impacts of mixing ethanol and non-ethanol gasoline

Evaluation of Real-World Impacts

- ◆ ARB Commingling Study
 - Established ARB/Industry workgroup
 - Evaluate consumer refueling practices
 - Vehicle fuel sampling program
- ◆ Results to be presented to Board in November 2001

Evaluation of Consumer Refueling Practices

- ◆ Information needed to estimate the percentage of refueling events expected to result in commingling
 - Brand and grade loyalty data
 - When and how much?
- ◆ Potential sources of information
 - Industry marketing data
 - Public survey data
 - Caltrans data regarding inter-regional trips between attainment and nonattainment areas

Vehicle Fuel Sampling Program

- ◆ Draft Commingling Study Fuel Sampling Protocol
 - Currently receiving comments
 - Initial field evaluation of protocol in June 2001
- ◆ Implementation of finalized protocol in August 2001
- ◆ Potential Issues Identified
 - Consumer cooperation
 - Site location (competition proximity, station volume, and customer type)
 - Frequency of site location changes
 - Vehicle tank access
 - Initial fuel level and volume dispensed

Legal/Enforcement Issues

Open Discussion

Closing Remarks